

**Work Order ID 91237**

October-03-12 2:44:53 PM

**\*91237\***

Page 1

Item ID: D6101-003

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Item Name: Saddle Billet, 7075

Stop **\*NS2\***

Start Date: 03/10/2012 Start Qty: 60.00

**\*60\***

Cust Item ID:

Required Date: 12/11/2012 Req'd Qty: 60.00

**\*60\***

Customer:

Reference:

Approvals: Process Plan: ML5 Date: 12-10-03 Tooling:Run Start **\*NR1\***

QC: Date: SPC (Y/N): Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D6101

Rev B

100

0.00

**\*100\***

PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 18082

- a) Description: Alluminum billet  
b) 7.875" x 6.250" x 2.00" thick  
c) Tolerance on all dimensions are +0.030"/-0.000"  
d) Grain direction along 7.875" length  
e) Material: 7075-T7351 (QQ-A-250/12)  
f) Material certification required

C2 12/10/05 (60)

110

Receive &amp; Inspect for Damage &amp; Mat'l Certs

0.00

**\*110\***

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

12/14/05 (60)

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>					
<b>Root Cause</b>	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											
<b>FAULT CATEGORY</b>											
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other		

**Work Order ID 91237**

October-03-12 2:44:53 PM

**\*91237\***

Page 2

Item ID: D6101-003

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Item Name: Saddle Billet, 7075

Stop **\*NS2\***

Start Date: 03/10/2012 Start Qty: 60.00

**\*60\***

Cust Item ID:

Required Date: 12/11/2012 Req'd Qty: 60.00

**\*60\***

Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC6- Inspect dimensions to drawing	0.00							
<b>*120*</b>									
QC	Memo	0.00							
Quality Control	Ensure Material certification comply to Dwg D6101								
130	Identify as per dwg & Stock Location: <b>MAT 42</b>	0.00							
<b>*130*</b>									
Packaging	Memo	0.00							
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
<b>*140*</b>									
QC	Memo	0.00							
Quality Control									

**12/10/27**  
**12/10/31**  
**1210-30**

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>					
<b>Root Cause</b>	<b>Date</b>	<b>Step</b>	<b>Qty</b>	<b>Description of work order update or Non-conformance</b>	<b>Initial Chief Eng</b>	<b>Action Description</b>	<b>Sign &amp; Date</b>	<b>Verification</b>	<b>QC Inspector</b>		
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											

FAULT CATEGORY			
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

# Picklist Print

October-03-12 2:44:57 PM

Page 1

Work Order ID: 91237

\*91237\*

Parent Item: D6101-003

\*D6101-003\*

Parent Item Name: Saddle Billet, 7075

Start Date: 03/10/2012

Required Date: 12/11/2012

Start Qty: 60.00

Required Qty: 60.00

Comments: IPP A: 01.05.04New IssueC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-003P		Purchased	No			110	Each	0.0000	1	60			
*D6101-003P*									**				
7075-T7351 2X6.25X7.875													

*4/2/12 (60)*

NCR: Yes / No

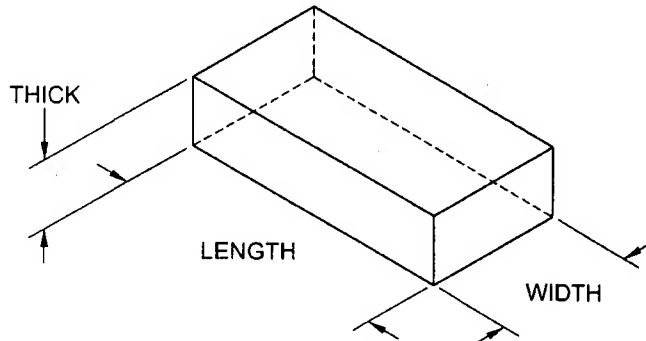
**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width:100%; border: none;"> <tr> <td style="width:25%;">Skid-tube <input type="checkbox"/></td> <td style="width:25%;">Crosstube <input type="checkbox"/></td> <td style="width:25%;">Water Jet <input type="checkbox"/></td> <td style="width:25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>						Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>																								
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>																								
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>																								
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																									
<b>Root Cause</b>	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector																		
Doc/Data <input type="checkbox"/>																											
Equip/Tooling <input type="checkbox"/>																											
Operator <input type="checkbox"/>																											
Material <input type="checkbox"/>																											
Setup <input type="checkbox"/>																											
Other <input type="checkbox"/>																											
Process <input type="checkbox"/>																											
Supplier <input type="checkbox"/>																											
Training <input type="checkbox"/>																											
Unapproved <input type="checkbox"/>																											
<b>FAULT CATEGORY</b>																											
<table style="width:100%; border: none;"> <tr> <td style="width:33%; vertical-align: top;"> <b>Landing Gear</b>  <input type="checkbox"/> Bending  <input type="checkbox"/> Centre Not Concentric to O/S  <input type="checkbox"/> Cracks  <input type="checkbox"/> Crushed/Crimped  <input type="checkbox"/> Cuffs  <input type="checkbox"/> Heat Treat  <input type="checkbox"/> Inspection Strip in Tube  <input type="checkbox"/> Ripples in Bend  <input type="checkbox"/> Torque Waves in Extrusion  <input type="checkbox"/> Turning Sequence  <input type="checkbox"/> Wave/Twist in Tube         </td> <td style="width:33%; vertical-align: top;"> <b>General</b>  <input type="checkbox"/> Bend  <input type="checkbox"/> BOM/Route  <input type="checkbox"/> Broken/Damaged  <input type="checkbox"/> Burrs  <input type="checkbox"/> Contamination  <input type="checkbox"/> Countersink  <input type="checkbox"/> Cut Too Short  <input type="checkbox"/> Drill Holes  <input type="checkbox"/> Drawing  <input type="checkbox"/> Finish  <input type="checkbox"/> Folio         </td> <td style="width:33%; vertical-align: top;"> <input type="checkbox"/> Grain  <input type="checkbox"/> Hardware  <input type="checkbox"/> Inspection Incomplete  <input type="checkbox"/> Instructions Incomplete/Unclear  <input type="checkbox"/> Maintenance  <input type="checkbox"/> Mislabeled  <input type="checkbox"/> Misread  <input type="checkbox"/> Offset  <input type="checkbox"/> Out of Calibration  <input type="checkbox"/> Out of Sequence  <input type="checkbox"/> Outside Dimensions         </td> <td style="width:33%; vertical-align: top;"> <input type="checkbox"/> Ovalized  <input type="checkbox"/> Over/Under tolerance  <input type="checkbox"/> Part Incorrect  <input type="checkbox"/> Part Lost/Missing  <input type="checkbox"/> Part Moved  <input type="checkbox"/> Positioned Wrong  <input type="checkbox"/> Power Loss/Surge    <input type="checkbox"/> Pressure/Forced  <input type="checkbox"/> Temperature/Cure  <input type="checkbox"/> Weld  <input type="checkbox"/> Wrong Stock Pulled    <input type="checkbox"/> Other         </td> </tr> </table>										<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other														
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other																								

# SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

**B** ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

**RELEASED**  
09/07/15/WJ

SHOP COPY  
 RETURN TO  
 ENGINEERING  
 UNCONTROLLED COPY  
 SUBJECT TO AMENDMENT  
 WITHOUT NOTICE  
 WORK ORDER  
 NO. 91237 MCT  
 12-10-03

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>					
<b>Root Cause</b>	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY				
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other



**Castle Metals®**

A. M. Castle &amp; Co.

**BORDEREAU DE MARCHANDISES**

Page 1 of 2

No de Formulaire d'Emballage / Shipment No:1515992

Expédié de / Ship From:		Vendu à / Sold To:		Expédié à / Ship To:		Livré à / Deliver To:	
A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date d'expédition / Date Shipped	F.O.B.	Modalités de transport / Freight Terms		Transporteur / Carrier		No du Bon de connaissance / BOL No	
24-OCT-2012	ORIGIN	Prepaid		MANITOULIN		1515992-2	

Détails d'expédition / Shipment Details	Destination finale / Final Destination Branch - MON
---	---

N° de commande / Order No		N° de ligne Line No	N° d'article / Item No	Description			
2474770		1	752237.MO	2.0000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT RECTANGLE TO 6.25 IN ( ) X 7.875 IN ( ) SPECIFICATIONS: SHIP OCTOBER OCTOBER 26TH ONLY - NOT BEFORE QQ-A-250/12			
N° de bon de commande / Purchase Order No		Nbre de pièces / Part Number		Qté commandée / Ordered Qty		Qté Facturée / Invoice Qty	
18082		YOUR ITEM NUMBER: D6101-003		60.00 PCS		60.00 PCS	
Détails / Details		SHIP OCTOBER OCTOBER 26TH ONLY - NOT BEFORE QQ-A-250/12					
N° de livraison / Delivery No :	Usine / Mill	No de coulée / Heat Number	Code méc / Mech Id	Pièce s / PCS	Largeur (Pouce)/ Width (IN)	Longueur (Pouce)/ Length (IN)	Qté expédiée/ Shipped Qty(LBS)
118088792	MATERIALS TECHNOLOG Y SOLUTIONS	605568A5		26		DAS 14 8-89	264.1820
118088792	MATERIALS TECHNOLOG	443593A9		30			304.8254

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.

Date Printed: 24-OCT-2012 03:02:44 PM



**Castle Metals®**

A. M. Castle &amp; Co.

**BORDEREAU DE MARCHANDISES**

Page 2 of 2

	Y SOLUTIONS					
118088792	MATERIALS TECHNOLOG Y SOLUTIONS	528768A5		2		20.3217
118088792	MATERIALS TECHNOLOG Y SOLUTIONS	528768A5		1		10.1609
118088792	MATERIALS TECHNOLOG Y SOLUTIONS	550354A5		1		10.1609
<p>Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des États-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des États-Unis est interdite.</p> <p>These commodities/technologies are subject to US Export Administration &amp; US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.</p> <p>Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle &amp; Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.</p> <p>We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle &amp; Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.</p>						
Ce matériel a été reçu et inspecté par Reviewed by Authorized Castle Metals Representative:			Date:		Name:	

DAS  
14  
2-89

Item 752237.Bo

P016994

3 pages

SHIP TO:  
SCOPE METAL GROUP LTD  
P.O. BOX 3 BNE AYISH  
PARK REEM  
MIVZA, IL 79845

SOLD TO:  
SCOPE METAL GROUP LTD  
P.O. BOX 3 BNE AYISH  
PARK REEM  
MIVZA, IL 79845

**KAISER  
ALUMINUM**

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

# CERTIFIED TEST REPORT

Serial Number  
4212407

CUSTOMER PO NUMBER: 4800013870		WORK PACKAGE:		CUSTOMER PART NUMBER:		SHIP RUN/LOAD: 101942/8		GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1105688	LINE ITEM: 9	SHIP DATE: 10-DEC-2010	ALLOY: 7075	GLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: Sawed Plate			
WEIGHT SHIPPED: 15802 LB	QUANTITY: 11 PCS EST.	SL NUMBER: 2029988	GUAGE: 2.0000 IN	DIAMETER/WIDTH: 48.500 IN		LENGTH: 144.500 IN			

## According to RoHS

AMS 4078/RevG  
ASTM B 209/Rev07  
BSS 7065/RevA  
DPS 4.713/RevAH  
MMS 189/RevN

## Certified Specifications

AMS-00-A-250/12  
ASTM B 594/Rev06  
CMMP 025/RevT  
GAMPS 9101/RevB  
PS 21211/RevK

Test Code: 4297

## Test Results

Lot: 528768A5 Cast 344

Drop 87

Ingot 2

(ASTM E8/B557)  
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPa)	Yield KSI (MPa)	Elongation %
	T7351	LT / 2 (Min:Max)	71.3 : 73.5 (492 : 507)	60.8 : 63.8 (419 : 439)	11.8 : 11.9

(ASTM E1004) (EN 2004-1)			
Conductivity %IACS:	41.3 Min	41.8 Max	
(MS/M):	24.0 Min	24.2 Max	

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.10	0.18	1.4	0.03	2.4	0.20	5.7	0.03	0.01	0.01	TOT 0.06

C.NO 21199  
OC.NO 537050812367805



Scope	MATERIAL TESTED
Electrical conductivity, % IACS	41.4
Inspector	Lo 528942A6

AMS-STD-2154/Rev98  
BAC 5439/RevH  
CSTI 008/RevD  
GSS16100/RevG/Amd1

Scope	MATERIAL TESTED
Electrical conductivity, % IACS	41.4
Inspector	Lo 528768A5

Scope	MATERIAL TESTED
Electrical conductivity, % IACS	41.3
Inspector	Lo 528955A8

SCOPE METAL GROUP LTD. מפעל סקופ מתכות בע"מ QUALITY INSPECTION/איכות/קורה	
Date	50.12.12
Order No.	15870
Invoice	1540-28935
Material inspection/בדיקת חומרים	
to Spec. AMS-00-A-250/12	
Inspector	AMS 00-A-250/12

## Castle Metals Men

HEAT NUMBER 528768A5  
MECHANICAL ID \_\_\_\_\_  
ITEM CODE 752237.Bo  
LOT NUMBER 2768786 MON-789  
PO NUMBER 16964  
RECEIPT DATE 10-23-12  
SUPPLIER MTS  
SPECIFICATION AMS-00-A-250/12  
LCS \_\_\_\_\_  
COMMENT \_\_\_\_\_  
APPROVED \_\_\_\_\_

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4212407

Lot: 52864246 Cast 356 Drop 03 Ingot 3

(ASTM B209)  
(EN 2002-1)

Tensile:	Temp	Dt / s Tens	Ultimate KSI (MPa)	Yield KSI (MPa)	Elongation %
	77361	LT / 2 (Min:Max)	72.0 : 72.5	60.8 : 62.2	10.6 : 11.0
			(406 : 500)	(420 : 428)	

(ASTM E1004)  
(EN 2004-1)  
Conductivity %IACS : 41.2 Min  
(MSM) : 23.9 Min

(ASTM E1261)  
Chemistry: SI FE CU MN MG CR ZN TI V ZR OTHER  
Actual 0.11 0.17 1.4 0.03 2.6 0.20 5.6 0.02 0.01 0.01 TOT 0.06

Lot: 52865646 Cast 344 Drop 09 Ingot 1

(ASTM B209)  
(EN 2002-1)

Tensile:	Temp	Dt / s Tens	Ultimate KSI (MPa)	Yield KSI (MPa)	Elongation %
	77361	LT / 2 (Min:Max)	71.5 : 72.7	61.1 : 62.6	11.5 : 12.2
			(493 : 501)	(421 : 432)	

(ASTM E1004)  
(EN 2004-1)  
Conductivity %IACS : 41.4 Min  
(MSM) : 24.0 Min

(ASTM E1261)  
Chemistry: SI FE CU MN MG CR ZN TI V ZR OTHER  
Actual 0.10 0.18 1.4 0.03 2.6 0.20 5.7 0.04 0.01 0.01 TOT 0.06

### ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH 0.05
MAX	0.40	0.50	2.0	0.30	2.8	0.28	6.1	0.20	0.05	0.05	TOT 0.16

Aluminum Remaneder

ORDER COMMENTS  
SHIP TO STOCK



# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4212407

### TEST NOTES

Metal represented by this test report was immersion  
ultrasonically tested from one side and meets the Class A  
and Class B requirements of all specifications referenced  
on this test report.



32-1052-05

### CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 228.272-1(h), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 228.226 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. 18U-8001:2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR

A handwritten signature in dark ink, appearing to read "Bill Poynor", with a stylized flourish at the end.

Item 752237.30 Po 16964 2 pages

<b>SHIP TO:</b> HADCO METAL TRADING CO. LLC 2811 CHARTER RD PHILADELPHIA, PA 19154		<b>KAISER ALUMINUM</b> Trentwood Works - Spokane, WA 99215 Phone: (800) 367-2586  <b>CERTIFIED TEST REPORT</b>  Serial Number 4275282				
<b>SOLD TO:</b> HADCO METAL TRADING CO. LLC 2811 CHARTER RD PHILADELPHIA, PA 19154						
<b>CUSTOMER PO NUMBER:</b> 035929	<b>WORK PACKAGE:</b>	<b>CUSTOMER PART NUMBER:</b>	<b>SHIP RUN/LOAD:</b> 102420/22	<b>GOVT CONTRACT NUMBER:</b>		
<b>KAISER ORDER NO:</b> 1135384	<b>LINE ITEM:</b> 8	<b>SHIP DATE:</b> 10-SEP-2012	<b>ALLOY:</b> 7075	<b>CLAD:</b> BARE	<b>TEMPER:</b> T7351	<b>PRODUCT DESCRIPTION:</b> Sawed Plate
<b>WEIGHT SHIPPED:</b> 5324 LB	<b>QUANTITY:</b> 3 PCS EST.	<b>TRUCK B/L #:</b> 2038751	<b>GAUGE:</b> 2.0000 IN (50.8000 MM)	<b>DIAMETER/WIDTH:</b> 60.500 IN (1538.7 MM)	<b>LENGTH:</b> 144.500 IN (3670.3 MM)	

MHU 1618538: LOT 605568A5: 2 pieces;  
MHU 1618539: LOT 605568A5: 1 pieces;

### Certified Specifications

AMS 4078/RevJ  
ASTM B 209/Rev10  
BSS 7055/RevA  
DPS 4.713/RevAH  
MMS 159/RevT

AMS-QQ-A-250/12  
ASTM B 594/Rev08  
CMMP 025/RevU  
GAMPS 9101/RevB  
PPS 20.04/Rev7

AMS-STD-2154/Rev98  
BAC 5439/RevH  
CSTI 006/RevD  
GSS16100/RevG/Amd1  
PS 21211/RevL

Test Code: 4297

### Test Results

Lot: 605568A5 Cast 487

Drop 07

Ingot 3

Melted in USA

(ASTM E8/B567)  
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	69.3 : 70.2 (478 : 484)	57.0 : 59.0 (393 : 407)	11.5 : 11.9

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	41.0 Min	41.2 Max
(MS/M) : <td>23.8 Min</td> <td>23.9 Max</td>	23.8 Min	23.9 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.08	0.17	1.4	0.02	2.4	0.20	5.6	0.03	0.01	0.01	TOT 0.05

### Castle Metals Men

HEAT NUMBER 605568A5  
MECHANICAL ID \_\_\_\_\_  
ITEM CODE 752237.30  
LOT NUMBER 2768787  
PO NUMBER 16964  
RECEIPT DATE 10-23-12  
SUPPLIER MTS  
SPECIFICATION AMS-QQ-A-250/12  
LCS \_\_\_\_\_  
COMMENT \_\_\_\_\_  
APPROVED g

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4275282

### ALLOY LIMITS

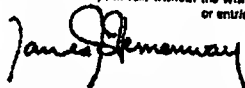
7075	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15
Aluminum Remainder												

### TEST NOTES

Metal represented by this test report was 100% immersion ultrasonically tested from one side with 3mm dead zones top and bottom and meets the Class A and Class B requirements of all specifications referenced on this test report. No surface marking of sonic indications is performed.

### CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminum Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law. ISO-9001:2000 certified.



JAMES HEMENWAY, LABORATORIES SUPERVISOR



Item 752237.30 PO 16964 3 pages

SHIP TO:  
SCOPE METL TRADING-TECH SVCS.  
P.O. BOX 3 BNE AYISH  
PARK REEM  
MIVZA, IL 79845

SOLD TO:  
SCOPE METL TRADING-TECH SVCS.  
P.O. BOX 3 BNE AYISH  
PARK REEM  
MIVZA, IL 79845

**KAISER  
ALUMINUM**

Trentwood Works - Spokane, WA 99215  
Phone: (800) 387-2586

**CERTIFIED TEST REPORT**

Serial Number  
4141964

According to RoHS

CUSTOMER PO NUMBER: 4800008412	WORK PACKAGE:	CUSTOMER PART NUMBER:	SHIP RUNLOAD ID: 10137405	GOVT CONTRACT NUMBER:		
KAISER ORDER NO: 1070093	LINE ITEM: 1	SHIP DATE: 19-SEP-2008	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE
WEIGHT SHIPPED: 8864 LB	QUANTITY: 2 PCS EST.	URL NUMBER: 2019506	GALVNE: 2.0000 IN	WIDTH: 84.500 IN	LENGTH: 250.000 IN	

**Certified Specifications**

AIR 9048-690/Rev1  
AMS-STD-2154  
DAN 422/Rev1188  
Q8816100/RevC  
MMS 159/RevN

AMS 4076/RevG  
ASTM B 694/Rev06  
DPS 4.713/RevAH  
LN 29 765  
PS 21211/RevK

AMS-QQ-A-250/12  
BSS 7055/RevA  
EN 2004-2/Rev2  
LN 9073/Rev8  
WL 3.4364/Rev1

Test Code: 2317

**Test Results**

Lot: 443593A9 Cast 188

Drop 02

Ingot 3

(ASTM B9/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	73.4 : 76.1 (508 : 518)	62.4 : 64.7 (430 : 448)	10.7 : 11.2
	T7351	L / 2 (Min:Max)	72.3 : 74.0 (499 : 510)	61.7 : 64.0 (428 : 441)	13.4 : 13.6
	T7351	ST / 2 (Min:Max)	72.9 : 74.5 (503 : 514)	58.0 : 58.8 (400 : 481)	6.7 : 7.6

(ASTM E1004)

Conductivity %IACS :	40.5 Min	41.3 Max
(MS/M) :	23.5 Min	24.0 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.08	0.17	1.5	0.02	2.5	0.20	5.9	0.02	0.01	0.01	TOT 0.03

SCOPE	MATERIAL TESTED
Electrical conductivity, % IACS	42.4
Inspector	Lot: 443593A9

SCOPE	MATERIAL TESTED
Electrical conductivity, % IACS	41.8
Inspector	Lot: 443593A9

SCOPE METALS GROUP LTD  
1533 212310 BPO 212310  
QUALITY INSPECTION / INYKATIP

Date: 17.10.08  
Order No. 8414  
Invoice: 7540-223730  
Material conforms / תואמת החומר  
AMS-QQ-A-250/12  
Inspector: MMS 159



Page 1 of 3

C.NO 87327  
OC.NO 537050821491806

**Castle Metals Men**

ITEM NUMBER 443593A9  
MECHANICAL ID  
ITEM CODE 752237.30  
LOT NUMBER 2768788 MON  
PO NUMBER 16964  
RECEIPT DATE 10-23-12  
SUPPLIER MTS  
SPECIFICATION AMS-QQ-A-250/12  
LCS  
COMMENT  
APPROVED

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4141964

Lot: 445548A1 Cast 178 Drop 52 Ingot 1

### (ASTM B5657)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.2 : 73.6 (488 : 507)	81.5 : 83.4 (424 : 437)	10.4 : 10.8
	T7361	L / 2 (Min:Max)	71.5 : 73.2 (493 : 505)	81.1 : 83.4 (421 : 437)	12.7 : 13.0
	T7351	ST / 2 (Min:Max)	71.2 : 72.4 (481 : 488)	88.9 : 89.6 (408 : 411)	5.0 : 5.7

### (ASTM E1004)

Conductivity %IACS :	40.8 Min	40.8 Max
(MS/M) :	23.5 Min	23.7 Max

### (ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.08	0.24	1.4	0.03	2.4	0.18	5.8	0.03	0.01	0.02	TOT 0.06

### ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.06
MAX	0.40	0.50	2.0	0.30	2.8	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

### ORDER COMMENTS

SHIP TO STOCK

### TEST NOTES

FOR PRODUCT THICKER THAN 12.5 mm, LT AND L ELONGATION  
RESULTS ARE BASED UPON A 30 GAUGE LENGTH. ANY ST ELONGATION  
RESULTS ARE BASED UPON A 4D GAUGE LENGTH.

ELONGATION RESULTS ARE BASED UPON A 50 mm GAUGE LENGTH FOR  
PRODUCT LESS THAN 12.5 mm THICK.

UNLESS SPECIFICALLY REQUESTED OTHERWISE ON THE ORDER, THE  
DIMENSIONAL TOLERANCES ARE CERTIFIED TO MEET THE TOLERANCE  
REQUIREMENTS OF LN 9073.

Metel represented by this test report was immersion  
ultrasonically tested from one side and meets the Class A  
and Class B requirements of all specifications referenced  
on this test report.



77-2765-01

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4141984



### CERTIFICATION

Kaiser Aluminum Fabricating Products, LLC (Kaiser) hereby certifies that serial number 4141984 was melted in the U.S.A. or Canada and manufactured in the U.S.A. and has been inspected and found to comply with the requirements of the applicable specifications as indicated herein. All metal which is meltedly heat-treated complies with the applicable specifications and is not subject to any other special tests and conditions of sale. This certificate is on file subject to examination. This separate serial number is not subject to any other special tests and conditions of sale. Without the written approval of Kaiser Aluminum Fabricating Products, LLC (Kaiser), the recording of false, fictitious or fraudulent statements on entries on the certificate may be punished as a felony under federal law, 18 USC 1001: 2000 Certified

BILL POYNOR, LABORATORIES SUPERVISOR

A handwritten signature in black ink, appearing to read "Bill Poynor".

Item 752237-Bo Po 16964 2 pages

SHIP TO: HADCO METAL TRADING CO. LLC 2811 CHARTER RD PHILADELPHIA, PA 19154
SOLD TO: HADCO METAL TRADING CO. LLC 2811 CHARTER RD PHILADELPHIA, PA 19154

**KAISER  
ALUMINUM**  
Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4227292

CUSTOMER PO NUMBER: 027078	WORK PACKAGE:	CUSTOMER PART NUMBER:	SHIP UNLOAD: 102058/9	GOVT CONTRACT NUMBER:		
KAISER ORDER NO: 1114270	LINE ITEM: 16	SHIP DATE: 24-MAY-2011	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: Sawed Plate
WEIGHT SHIPPED: 7146 LB	QUANTITY: 4 PCS EST.	S/L NUMBER: 2032162	GAUGE: 2.0000 IN	DIAMETER/WIDTH: 60.500 IN	LENGTH: 144.500 IN	

### Certified Specifications

AMS 4078/RevH  
ASTM B 209/Rev07  
BSS 7055/RevA  
DPS 4.713/RevAH  
MMS 159/RevN

AMS-QQ-A-250/12  
ASTM B 594/Rev08  
CMMP 025/RevT  
GAMPS 9101/RevB  
PS 21211/RevK

AMS-STD-2154/Rev98  
BAC 5439/RevH  
CSTI 006/RevD  
GSS18100/RevG/Amd1

Test Code: 4297

### Test Results

Lot: 550354A5 Cast 383

Drop 84

Ingot 4

Melted in USA

(ASTM E8/B557)  
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPa)	Yield KSI (MPa)	Elongation %
	T7351	LT / 2 (Min:Max)	71.5 : 73.2 (493 : 505)	80.2 : 82.8 (415 : 433)	10.5 : 10.8

(ASTM E1004)  
(EN 2004-1)

Conductivity %IACS :	40.1 Min	40.4 Max
(MS/M) :	23.3 Min	23.4 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.10	0.23	1.6	0.09	2.5	0.21	5.8	0.02	0.01	0.01	TOT 0.03

Castle Metals

HEAT NUMBER 550354A5  
MECHANICAL ID \_\_\_\_\_  
ITEM CODE 752237-Bo  
LOT NUMBER 2768830 MON  
PO NUMBER 16964  
RECEIPT DATE 10-23-12  
SUPPLIER MTS  
SPECIFICATION AMS-QQ-A-250/12  
LCS \_\_\_\_\_  
COMMENT \_\_\_\_\_  
APPROVED 9

14  
8-88  
12/10/27

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4227292

ALLOY LIMITS												
	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075												
MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15
Aluminum Remainder												

### TEST NOTES

Metal represented by this test report was immersion  
ultrasonically tested from one side and meets the Class A  
and Class B requirements of all specifications referenced  
on this test report.

### CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(h), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTIRETS ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.



BILL POYNOR, LABORATORIES SUPERVISOR